

1 TO WHOM IT MAY CONCERN:

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3 BE IT KNOWN THAT I, RAYMOND A. LIBERATORE, a
4 citizen of the United States of America, residing in
5 Bentonville, in the County of Benton, State of
6 Arkansas, have invented a new and useful improvement in

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10 SPREADER APPARATUS, FOR USE WITH DISPENSERS

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BACKGROUND OF THE INVENTION

This invention relates generally to flowable material spreaders for use on hand manipulable dispensers, and more particularly to spreaders at the nozzle ends of such dispensers.

There is need for means to easily, quickly and accurately spread material such as edible substances, being dispensed from containers such as squeeze tubes or bottles. Typical materials are peanut butter, frosting, butter, mayonnaise, jelly and other edible spreads for use on bread, crackers, and the like. This need extends to elimination of need for a separate knife or spatula, as can become lost on or at outdoor celebrations and picnics, or other events, or need to repeatedly dip a spreader knife into a jar. Material accumulates on the knife and jar edges; also, crumbs or other materials can accumulate in a jar.

SUMMARY OF THE INVENTION

It is a major object of the invention to provide novel and efficient apparatus meeting the above need. Basically, the invention is provided for use

1 with a hand manipulable, flowable material dispenser,
2 and comprises:

- 3 a) a dispensing nozzle associated with the
4 dispenser to dispense said material,
- 5 b) and a spreader surface associated with
6 the nozzle whereby the dispenser may be manipulated to
7 cause the spreader surface to spread material dispensed
8 via the nozzle, and the spreader surface can be used to
9 spread the material in desired positions, used as a
10 built-in spatula or knife without squeezing the
11 material out. Also, the invention enables squeezing
12 and spreading at the same time; or spreading only, as a
13 built-in knife and spatula.

14 As will be seen the spreader surface has the
15 form of a blade, or flap or spatula surface proximate
16 the nozzle exit, to shape and spread or move around the
17 material being dispensed. The spreader may be stiff or
18 flexible, as will appear, and is typically laterally
19 elongated or curved to encompass the width of a layer
20 of material being dispensed. The nozzle itself can be
21 flexible, to aid in utility of desired spreading of the
22 material being dispensed.

23 Additional objects include provision of a
24 spreader nozzle that is attachable as a cap to the exit
25 end of a container of the material being dispensed;
26 threaded, permanent or snap-on attachment of the

1 spreader nozzle to the container; the provision of a
2 serrated laterally extending edge on the spreader,
3 thereby to form striations on a layer of dispensed
4 material; the provision of a serrated edge at the
5 discharge end of the nozzle; and the provision of a
6 spreader with movement adjusted on the nozzle, as will
7 be seen.

9 DRAWING DESCRIPTION

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11 Fig. 1 is a side view of a spreader;

12 Fig. 2 is a perspective top view of the Fig.
13 1 spreader;

14 Fig. 3 is a frontal view of a spreader
15 dispensing opening;

16 Fig. 4 is a view like Fig. 2, but showing a
17 spreader flexible dispensing nozzle;

18 Fig. 5 is a side view of a spreader nozzle;

19 Fig. 6 is a top plan view of a spreader cap;

20 Fig. 7 is a view of an entrance at the inlet
21 end of a spreader as in Fig. 5;

22 Fig. 8 is like Fig. 7, showing a different
23 entrance configuration;

24 Fig. 9 is a side elevation showing the end of
25 a container to which a spreader cap attaches;

1 Fig. 10 is a frontal view of the Fig. 9
2 container end;

3 Fig. 11 is a side elevation showing a
4 spreader or narrowed configuration;

5 Fig. 12 is a side elevation of the discharge
6 end of a container to which the Fig. 11 spreader
7 attaches;

8 Fig. 13 is a top plan view of a spreader
9 discharge end, with a serrated edge;

10 Fig. 14 is a view like Fig. 13 showing a
11 nozzle discharge end with serrated edge;

12 Fig. 15 is a side elevation showing a nozzle
13 with a retracted movable spreader, and control;

14 Fig. 16 is a view like Fig. 15, showing the
15 movable spreader in extended position;

16 Fig. 17 is like Fig. 15, but showing the
17 movable retractable spreader at the underside of the
18 nozzle;

19 Fig. 18 is a top plan view of a nozzle with
20 an associated retractable and extendable spreader;

21 Fig. 19 shows a modified nozzle and spreader;

22 Fig. 19a shows the Fig. 19 spreader in tilted
23 position, for spreading use; and

24 Fig. 20 shows a curved flap or blade.

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DETAILED DESCRIPTION

In Figs. 1 and 2, a dispensing container 10 contains dispensable, flowable food material such as peanut butter, jelly or other such edibles such as referred to above. When the container is squeezed, the material flows through a nozzle 11 which tapers toward an outlet 12, which is elongated laterally, to provide a dispensed layer 13 of material of thickness 14 substantially less than its width 15. A flexible spreader 17 in the form of a flap or blade, or spatula, is provided at the nozzle exit, to face the layer 13 exiting from the nozzle, whereby the user can manipulate the spreader, and its undersurface, via container manipulation, to further spread or shape the dispensed layer 13. The flap or blade may be stiff or sufficiently flexible to shape the layer 13. Note its lateral length 19 substantially greater than its width.

The nozzle 11 may be stiff or may be flexible as in Fig. 4 to assist flexing of the spreader during container manipulation to cause the spreader to shape the layer 13 deposited on a surface 21 or spread it only after it is dispensed. The latter may be a food surface such as on bread, or other substances. Fig. 3

1 shows the nozzle outlet 22, which has lateral width 22a
2 substantially greater than its thickness 22b. The
3 nozzle may be a cap on the container, or may be
4 integral with the container. A snap-on or threaded
5 fitting 24 connects the nozzle to the container, in
6 Fig. 4.

7 Figs. 5 and 6 show a nozzle 32, tapering
8 toward a narrowed exit 33 with a spreader flap or blade
9 34 overhanging that exit. Fig. 6 shows a cap 190 that
10 receives the nozzle with snap-ring retention at 188 in
11 a cap recess 188a of nozzle end 32a. Cap inner wall
12 189 forms a recess to receive the nozzle. A plug 192
13 on the cap plugs outlet 33. Fig. 7 shows the exit 33
14 as laterally, elongated with narrowed width or height.
15 The nozzle entrance is seen at 34, in Fig. 8. Fig. 9
16 shows dispenser threads 36 to which the nozzle may
17 threadably or otherwise attach. Fig. 10 shows in
18 frontal view the annular end of the thread 36. See end
19 opening 10a.

20 Fig. 11 shows a flexible nozzle 40 that
21 tapers toward an outlet 41, such as an elongated slit.
22 The nozzle tip 40a serves as a spreader. The nozzle
23 has a fitting 43 that threadably attaches to dispenser
24 threads 44, as seen in Fig. 12.

25 Fig. 13 shows a spreader flap 46 that has a
26 laterally elongated serrated edge 47 to engage the

1 dispensed layer 48 being dispensed. As a result, the
2 layer 48 has an attractive striated appearance. The
3 nozzle can be waved laterally back and forth to produce
4 wavy elongated striations on the dispensed layer
5 surface. Fig. 14 shows similar serrations 50 on the
6 end of a nozzle 40b. A flap 51 can be attached to the
7 nozzle to overlies the serrations, or part of same.

8 In Fig. 15, the flap or blade 60 is carried
9 for adjustable movement, as by a carrier or adjuster 61
10 on the nozzle. A finger engagable protrusion 61a on
11 the carrier is manipulated to move or slide the blade
12 and carrier toward or away from the nozzle exit 41a,
13 thereby to adjust the exposure of the blade to the
14 dispensed material, to provide additional flexibility
15 of use of the blade. Grooving 63 in the nozzle in the
16 form of a threaded cap 63a, guides the adjuster. Fig.
17 16 shows the blade in extended forward position. The
18 dispensing nozzle cavity appears at 64. Fig. 18 is a
19 top plan view of the Fig. 16 adjuster. Fig. 17 shows
20 the adjuster at the bottom side of the nozzle 93,
21 having an exit 93a, and pusher. The option of
22 depositing the layer 113 without interference with the
23 spreader flap or blade, is preserved.

24 In Fig. 19, a spreader 110 blade or flap 110a
25 carried at 111 by, and may be fixedly or releasably
26 attached to or integral with, a nozzle 112. See bond

1 zone at 111. The spreader and nozzle are shown being
2 moved to the right. See arrow 125, and a layer of
3 dispensable material 113 is deposited on substrate 126,
4 via bore 112a of the nozzle. Material 113 is typically
5 edible, and may consist for example of peanut butter,
6 butter, frosting, mayonnaise, jam, jelly, soft cheese,
7 or other edibles.

8 In Fig. 19, the spreader 110 as supported is
9 angled, relative to the nozzle or its bore, so that the
10 spreader flap terminal 110a' is sufficiently offset
11 from the nozzle outlet 112a by a sufficient distance,
12 that the terminal tip 110a' does not engage the top
13 113a of the deposited layer 113, as during depositing
14 of the layer. Terminal 110a' may consist of an
15 elastomer such as rubber. Outlet 112a may be laterally
16 elongated as in Fig. 7.

17 In Fig. 19a the nozzle is now further tilted,
18 as at angle α , so that the spreader blade terminal tip
19 110a' engages the surface of the layer 113, for
20 spreading purposes. Terminal 110a is shown as
21 arcuately flexed near the tip, to smoothly engage and
22 spreadably deform surface 113a, as the nozzle is moved
23 to the right, relative to 113. Note that the spreader
24 body at 110c upwardly of terminal 110a' is thickened so
25 as not to flex, and so as to positively position the

1 terminal 110a' as it accurately wipes along surface
2 113a. Terminal 110a' may or may not be flexible, but
3 is preferably arcuately flexible to smooth and spread
4 surface 113a, as the nozzle and supply container are
5 manipulated.

6 Body 110c tapers toward the tip or terminal.
7 This construction, as shown, lends itself to ease of
8 cleaning of interior surfaces 128, 129, and 130, as
9 well as cleaning of the terminal. Note the greater
10 than 90° angularities of adjacent surfaces 128 and 129,
11 and 129 and 130, avoiding small gaps. The spreader
12 terminal at 110a' may have elongated lateral length, of
13 dimension substantially greater than the nozzle
14 discharge opening dimension, as described above in
15 other Figures, for engaging the widened surface area of
16 113, achieved during spreading.

17 Fig. 20 shows a curved flap or blade to
18 conform to curvature of an edible, such as a corn cob.
19 See laterally elongated nozzle outlet 22 having
20 narrowed width 22b. A downwardly concave spreader flap
21 or blade 17a is shown as above the outlet 22, and of
22 lateral elongation greater than outlet 22 lateral
23 elongation, indicated at 22a.

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